Ayres service letter **No. SL-AG-94**

Corporation

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Service Letter No. SL-AG-94
3 November, 1980

ELECTRICAL SYSTEM MODIFICATION

MODELS AFFECTED: S2R, S/N 1416R thru 2452R with Pratt & Whitney PT6A-34AG Engine installed per STC SA3237WE amended 8/29/77 and per STC SA3238WE amended 8/29/77, S2R-T34 S/N 6000 thru 6049, S2R-T34 S/N T34-001 thru T34-052, S2R-T15 S/N T15-001 thru T15-014, S2R-T11 S/N T11-001 thru T11-003.

REASON FOR PUBLICATION: 1. This letter adds a bleed resister between the battery relay and the generator field terminal. This resistor prevents any possibility of polarity reversal in the generator field, if the generator is turned off with the engine running. The addition of the resistor also makes the electrical system eligible for installation of the Phoenix Aerospace Inc. Model VR1010-24-1A transistorized voltage regulator in place of the Bendix Aviation Corp. No. 1042-17A or the Trio Aviation No. 1598-1D Carbon Pile Regulator.

2. This letter also adds spark suppression diodes across the battery and the starter relays and a blocking diode to protect the battery relay-buss diode during APU starts.

COMPLIANCE: Within the next 100 flight hours upon receipt of this service letter.

NOTE

If any problems are encountered while complying with this service letter, contract your Ayres Thrush dealer.

BY WHOM WORK WILL BE ACCOMPLISHED: A & P Mechanic or equivalent

APPROVAL: FAA Approved

ESTIMATED MAN HOURS: Two (2) Man Hours

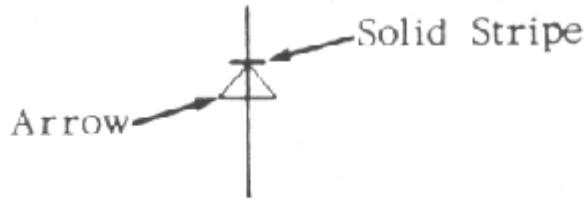
PARTS DATA: Parts required to comply with this Service Letter may be purchased thru your nearest Ayres Thrush Dealer. Reference this Service Letter, aircraft model and factory serial number when ordering Service Letter No. SL-AG-94 kit consisting of the following:

QTY	Part No.	Description
2 ea	9043-190	Diode Assembly
1 ea	90430-191	Diode Assembly
1 ea	90176-251	Wire Assembly
1 ea	90176-252	Wire Assembly
1 ea	17-10	Resistor
2 ea	AN526-632R7	Screw
2 ea	AN960-6	Washer
2 ea	MS21044N06	Nut
1 ea	AN526-428R22	Screw
1 ea	AN960-416	Washer
1 ea	MS21044N4	Nut

SPECIAL TOOLS: None

ACCOMPLISHMENT INSTRUCTIONS:

There are three (3) diodes and one (1) resistor that must be installed to insure proper operation of the electrical system in compliance with this Service Letter. To simplify the instructions the diodes will be referred to as diodes No. 1, No. 2, No. 3. Diode No. 1 and No. 2 will be installed on the master relay and diode No 3 will be installed on the starter relay. These relays are located on the right hand top on the battery mounting plate. The resistor will be installed on the battery mounting plate. It should be noted also that each diode has a solid stripe around it. This stripe indicates the direction of the current flow and also the direction in which the arrow points on the wiring schematic.



Diode Symbol in the Schematic

1 Remove wire No. 90176-29 from both terminals of the master relay and discard. (See Figure 1).

2 Connect the band end of the diodes No. 1 and No. 2 to the master relay coil terminal that the existing diode is attached. Connect the other end of diode No. 1 to the master relay terminal that has wire No. 90176-27 connected. Connect the other end of diode No. 2 to the master relay coil terminal that has wire No. 9043-181 attached. (See Figure 1)

3 Connect the band end of diode No. 3 to the master relay coil terminal that has wire No. 9043-187 attached. Connect the other end of diode No. 3 to the other started relay coil terminal. (See Figure 1).

4 Be sure that all the diodes are installed correctly. (See the Schematic)

5 Install the 150 OHM resistor P/N 17-10 to the battery mounting plate as shown in Figure 1.

6 Connect wire No. 90176-252 to the master relay terminal that has wire No. 90176-24 attached. Attach the other end of wire No. 90176-252 to the inbound terminal of the resistor P/N 17-10.

7 Attach wire No. 90176-251 to the outboard terminal of the resistor P/N 17-10. Attach the other end of wire No. 90176-251 to terminal "A" of the starter generator. (See Figure 1 and Figure 2)

8 Ensure that all wires are correctly connected prior to applying power and operating the engine. (Reference Schematic)

ELECTRICAL LOAD: No Change

WEIGHT AND BALANCE: No Change

PUBLICATIONS AFFECTED: The illustrated parts Catalog change required by this document will be incorporated at the next scheduled change/revision.

RECORD COMPLIANCE: Make appropriate entry in airplane permanent records as follows:

Service Letter No. SL-AG-94 dated 3 November 1980, entitled "Electrical System Modification", accomplished (date) _____.

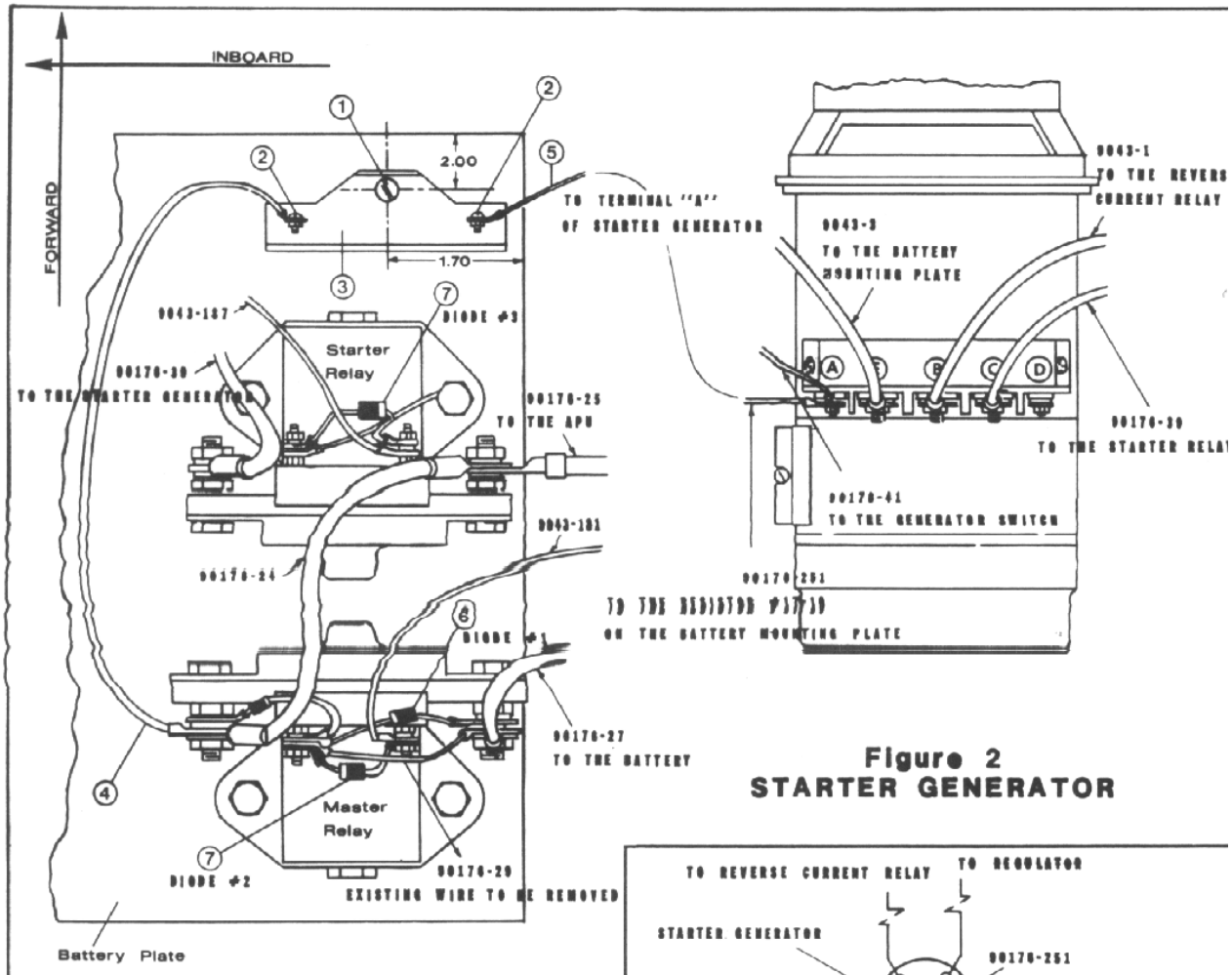


Figure 1
BATTERY MOUNTING PLATE

Figure 2
STARTER GENERATOR

FIGURE NUMBER	PART NUMBER	DESCRIPTION	QUANTITY
①	AN526-428R22 AN960-416 MS21044N4	SCREW WASHER NUT	1 1 1
②	AN526-632R7 AN960-6 MS21044N06	SCREW WASHER NUT	2 2 2
③	17-10	RESISTOR	1
④	90176-252	WIRE ASSEMBLY	1
⑤	90176-251	WIRE ASSEMBLY	1
⑥	9043-191	DIODE ASSEMBLY	1
⑦	9043-190	DIODE ASSEMBLY	2

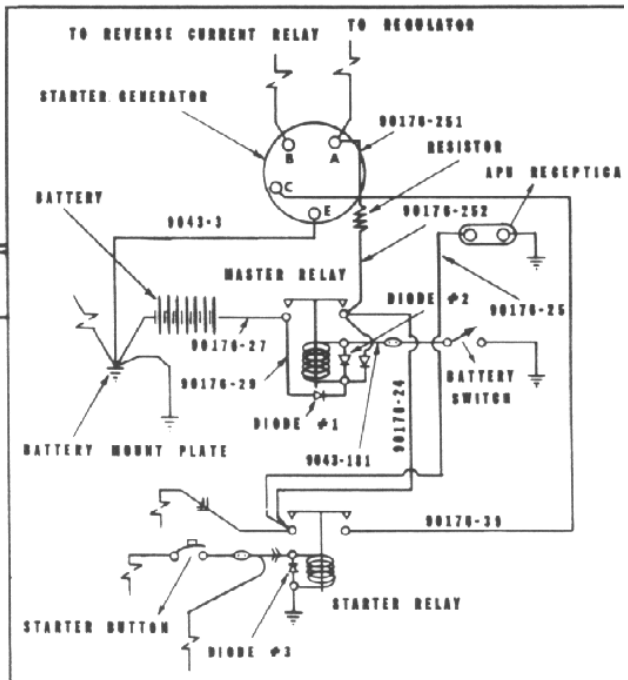


Figure 3
WIRING SCHEMATIC